ELAN Home Systems **Life Just Got Better**	TS2 Integration Note
Manufacturer:	ELAN Home Systems
Model Number(s):	**TS2, (OleXL updated to TS2)**
Software Versions:	Automation Controller - 5.0 build 637 or later ELAN SC1 - 1.0.3.1 ELAN TS2 - 1.0.4.1 or newer ELAN OleXL – must be flashed as TS2, see procedure below. g!ConnectPro version 5.2 build 583 or later
Document Revision Date:	03/28/2013

OVERVIEW AND SUPPORTED FEATURES

The TS2 keypads communicate on a dedicated VIA!Net bus to provide a compact single zone two way user interface. The legacy system controllers (HomeBricks and MultiBricks) will require an ELAN SC1 serial controller (RS-232 x VIA!Net) to communicate with the keypads. The HC series controllers will have a VIA!Net jack built in and will not require the SC1. Up to 32 keypads can be connected on a single VIA!Net bus. Refer to the TS2 installation manual for detailed installation diagrams and power requirements.

Note: The SC1 must be connected to a serial port on the controller. It is NOT compatible with SerialBricks, Global Cache ports, or Moxa ports. The SC1 must also be using the above firmware version. Newer firmware versions may not work.

IMPORTANT: THIS LEGACY FEATURES IS ONLY SUPPORTED IN 5.0 SYSTEMS.

ELAN HC CONTROLLERS DO NOT SUPPORT OR REQUIRE SC1.

THE TS2 KEYPAD SUPPORTS THE FOLLOWING FEATURES:

System Mode Control: The home interface may be optionally configured to provide system mode status and control.

Basic Time & Weather information: The home interface may be optionally configured to display time and basic weather information.

Lighting Control: The lighting interface displays a custom lighting keypad for 2-way control of scenes or lighting loads.

Security Control: The security interface displays status of one partition and a keypad to arm/disarm it.

Climate Control: The climate interface displays status of one climate zone and provides mode, fan, and set point adjustments.

Media Control: The media interface displays status of one media zone and provides controls for power, source, volume, mute, and basic source control. The interface provides meta data feedback (no cover art at this time) for supported two way devices or customizable single or multi-page interfaces for one way device control. See limitations below.

THE TS2 KEYPAD DOES NOT SUPPORT THE FOLLOWING FEATURES:

Various custom controls: Not all custom controls are supported on the TS2 interface. The result of this may be limited source control of various 3rd party AV sources.

INSTALLATION OVERVIEW

1. During the rough-in phase install the necessary power and cabling for the TS2 keypads. See connection diagrams below and refer to ELAN documentation for keypad power requirements.
2. If using the TS2 keypads with Legacy controllers (HomeBricks or MultiBricks) you will also need to run a Cat5 wire from the location of the VIA!Net port on the Controller or SC1 back to the Network Assembly of the **One**Home system to provide the serial connection needed to communicate. Refer to the **RS-232 Connection Options** Integration Note for other serial connection options.
3. Install the keypads and other home media and control components.
4. Connect the **One**Home system to the VIA!Net electrically. See the connection diagram for more information.
5. Configure the **One**Home system for the keypads and confirm communication between the keypads and the controller.
6. Configure and test the keypads for proper operation, See HomeLogic configuration details below.

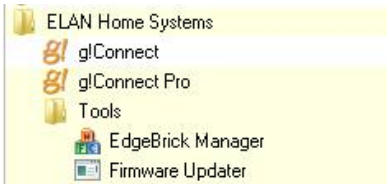
INITIAL SC1 CONFIGURATION NOTES

NOTE: The ELAN SC1 Serial Controller device is used to provide an RS-232 to VIA!Net bridge and is required when using TS2 keypads with Legacy HomeBrick and MultiBrick controllers.

The SC1 must be updated using the following procedure for use in a g! system. If you are unsure of the version of the SC1 use the following procedure to update it to the minimum version. This procedure requires a PC with a USB port, a USB "A" to USB "Mini-B" cable, the SC1, the ELAN Firmware Update Utility included with g!ConnectPro, and the ELAN Common Resources Library available from the ELAN dealer website which includes the required firmware files.

SC1 Firmware update procedure:

1. Verify that you have g!ConnectPro version 5.2 Build 583 or newer.
2. Run the Firmware Updater: Click Start/All Programs/ELAN Home Systems/ Tools/Firmware Updater.



3. Using the USB-USB-mini cable connect the SC1 to the PC. Remove all other connections to the SC1, it will be powered by the USB connection during the update.

Note: if this is the first time an ELAN USB device is connected to your PC you may see a pop-up message as the USB device driver installation is completed which may require a reboot of your system.

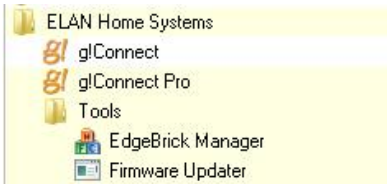
4. From the **Device** drop down menu select **SC1**. The firmware files window will populate with the available firmware files.
5. Click the **Transfer** button. The Status window will indicate the progress as the firmware is downloaded to the device.
6. Wait for the download to complete then click done to close the update utility. Disconnect the SC1 from the PC.

OLEXL – TS2 UPDATE PROCEDURE

NOTE: Use the following procedure to convert an OleXL for use as a TS2, this update is not required for TS2 keypads. This procedure requires a PC with a USB port, a USB "A" to USB "Mini-B" cable, the ELAN Firmware Update utility included with g!Connect Pro, the ELAN Common Resources Library, and the OleXL.

OleXL-TS2 Firmware update procedure:

1. Verify that you have g!ConnectPro version 5.2 Build 583 or newer
2. Run the Firmware Updater: Click Start/All Programs/ELAN Home Systems/ Tools/Firmware Updater.



3. Using the USB-USB-mini cable connect the TS2 to the PC. Remove all other connections to the TS2, it will be powered by the USB connection during the update.

Note: if this is the first time an ELAN USB device is connected to your PC you may see a pop-up message as the USB device driver installation is completed which may require a reboot of your system.

4. From the **Device** drop down menu select **TS2**. The firmware files window will populate with the available firmware files.
5. Click the **Transfer** button. The Status window will indicate the progress as the firmware is downloaded to the device.
6. Wait for the download to complete then click done to close the update utility. Disconnect the TS2 from the PC.
7. Replace the OleXL film with the TS2 film, see the TS2 Installation manuals for detailed instructions.
8. Set the Z-NET/VIA!Net switch on the back of the unit to the VIA!NET position.

INITIAL KEYPAD CONFIGURATION NOTES

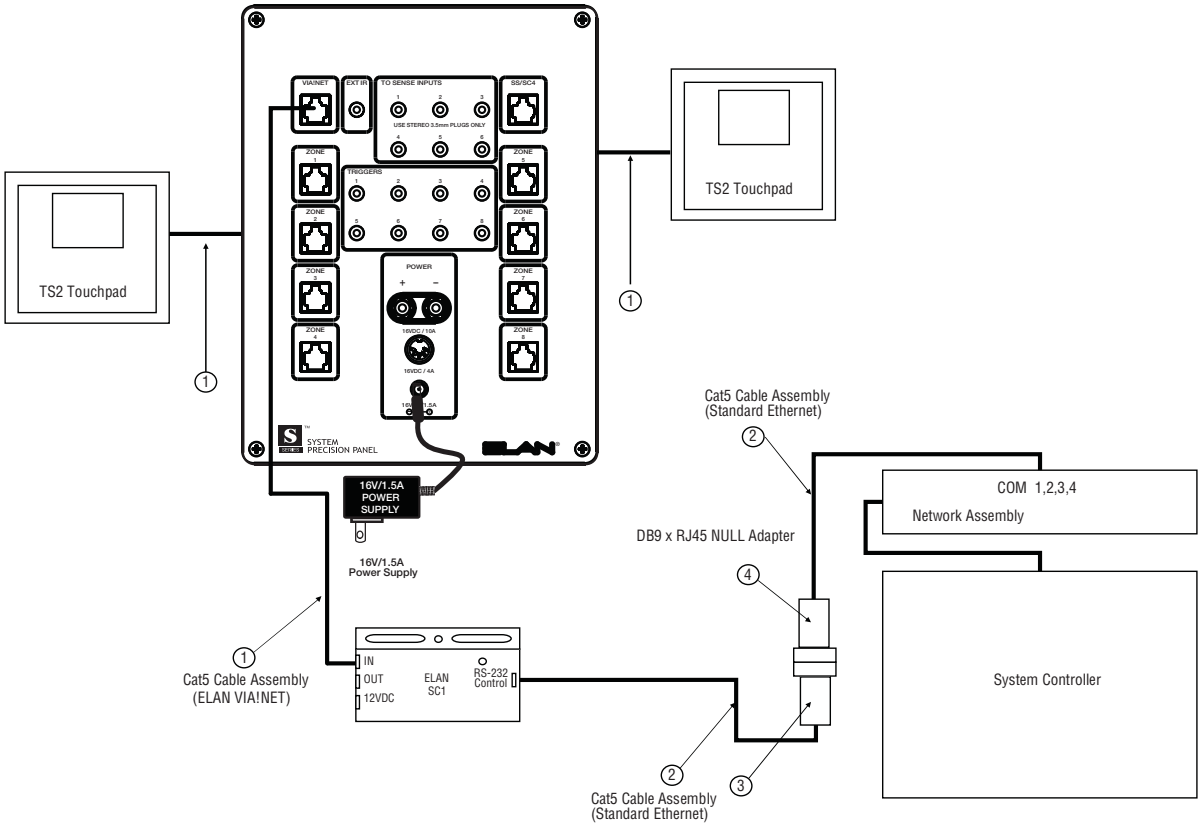
The TS2 keypads are automatically added to the system using the configurator and can not be added manually. Use the following procedure to make initial keypad connections to the system.

1. Connect and power up all keypads per the connections diagram below. The keypads should boot to a screen with an option to **GET ADDRESS**. If the keypad does not boot to the **GET ADDRESS** screen then follow the steps below:
    a. Press the service menu button (located behind bezel and below Mini-USB connection and light sensor) once to access the **MAIN MENU** screen.
    b. Press the **UP/DOWN** buttons to highlight **VNet addr** then press the **Enter** button.
    c. Press the **UP/DOWN** buttons to highlight **Reset addr** then press **Enter**.
2. In the configurator, click on the interface tab and add the SC1 as a communication device then select the COM port that it is connected to. See HomeLogic Configuration Details below.
3. On the TS2 (OleXL) keypad, verify the **GET ADDRESS** menu item is highlighted and press the **Enter** button. The keypad will receive an address from the controller and display it at the top of the screen.

Note: If more than one keypad is to be installed it may be helpful to make note of the address and the physical location of the keypad to aid in selecting the proper control zones in the following steps.

4. On the TS2 (OleXL) keypad, with the **OK** menu item highlighted press **Enter**. The controller will check the keypad program and download any required information to it. Be patient this may take up to 5 minutes.
5. Repeat steps 1-4 until all keypads have been added.
6. Using the address noted in step 3 identify each keypad on the Interface Tab and configure the desired zones, partitions, control, and backlight behavior. See HomeLogic Configuration Details below.

CONNECTION DIAGRAMS (VIA SC1 & SPP PRECISION PANEL)

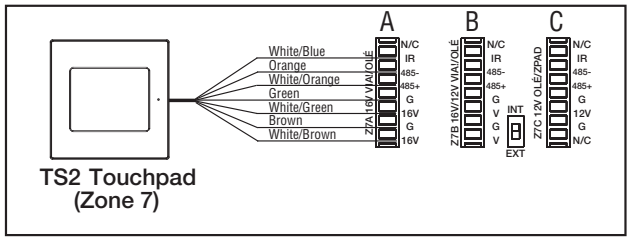


1 – ELAN Standard Cat5 Cable	3 – SC1 DB9M to RJ45 Adapter
2 – Ethernet Standard Cat5 Cable	4 – HA-CB-328 DB9F to RJ45 NULL Adapter

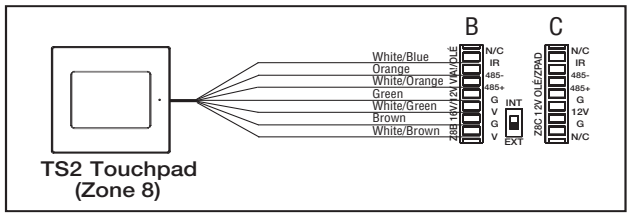
REAR PANEL CONNECTIONS AND SWITCHES

Punch-downs

The SPP Precision Panel has eight "zone" punch-down locations on the reverse side. Each location has "A," "B," and "C" 110 punch-downs. For the purpose of integrating TS2s the "C" 110 punch-downs are NOT used. A MAXIMUM of 16 TS2s can be connected to one SPP by using the "A" and "B" punch-downs in each zone location. "Double-punching" multiple wire runs to one 110 block is NOT recommended.



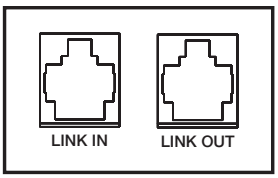
NOTE: When using the "B" punch-downs it is necessary to flip the "INT/EXT" switch to the EXT position to provide power to the TS2. (The "A" 110 punch-down block has been removed from the picture for clarity.)



REAR PANEL CONNECTIONS AND SWITCHES (CONTINUED)

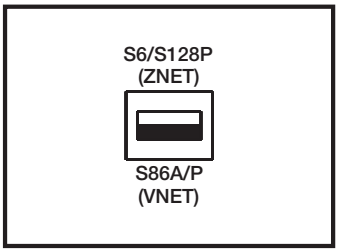
Linking SPPs

Multiple SPPs may be linked together using the “LINK” connections on the reverse side. This link carries V-Net information only. This connection uses the ELAN standard color code.



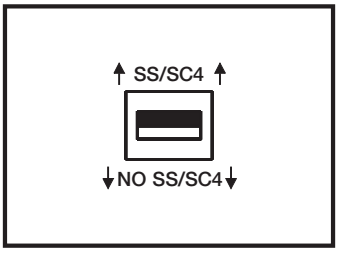
ZNET/VNET Switch

When integrating TS2s with a ZNET based system (S128P) this switch must be in the up (ZNET) position. When used with a VNET based system (S86A/P) this switch must be in the down (VNET) position.



SS/SC4 Switch

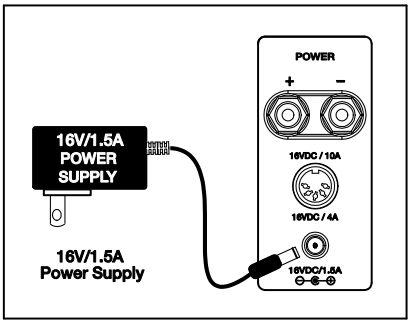
This switch **MUST** be set to the up (SS/SC4) position.



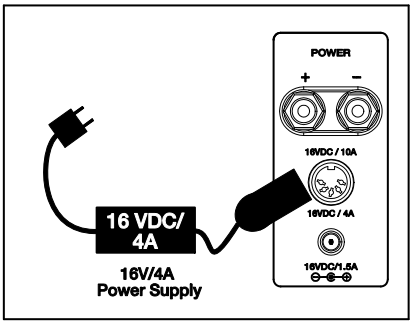
FRONT PANEL CONNECTIONS

When using an SPP it is necessary to connect a 16VDC power supply to the front of the panel. This will provide power for the TS2s and the SC1.

16V/1.5A Power Supply Connections



16V/4A Power Supply Connections



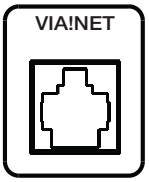
You can connect up to nine TS2s using the 1.5 amp 16VDC power supply. If adding more than nine TS2s the 4 amp 16VDC power supply is required. A MAXIMUM of 23 TS2s (plus the SC1) can be powered by one 4 amp power supply.

When using multiple SPPs it is recommended to power each SPP panel with a dedicated power supply.

FRONT PANEL CONNECTIONS (CONTINUED)

SC1 Connections

The SC1 connects to the front of the SPP at the RJ-45 connection labeled “VIA!NET” using a cat5 jumper pinned out to the ELAN standard color code. You can connect up to two SPPs directly to the SC1 by using the “IN” connection to one SPP and the “OUT” connection to the other SPP.



IR Connections

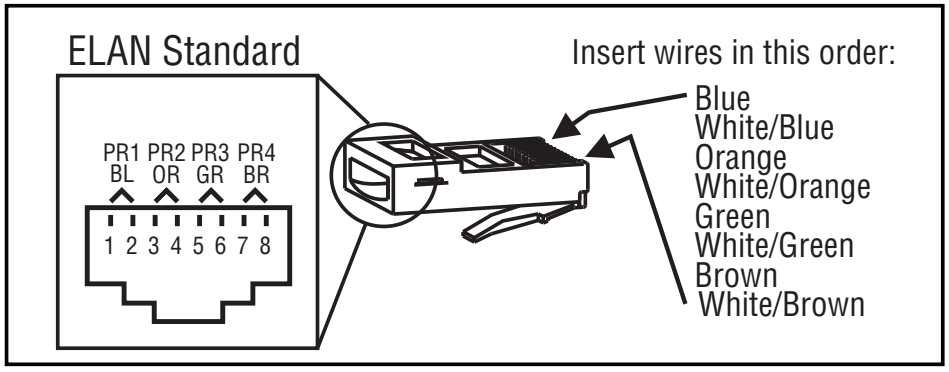
If you are not using the IR receivers built into the TS2s it is NOT necessary to connect cat5 jumpers from the front of the SPP to the A/V Controller (S12P, S86A/P, etc.) keypad inputs. If you will be using the IR receivers then cat5 jumpers will be needed.

Be sure to connect the Zone One connection from the SPP to the Zone One keypad input on the A/V Controller, Zone Two’s connection from the SPP to Zone Two’s keypad input of the A/V Controller and so on to maintain proper IR routing.

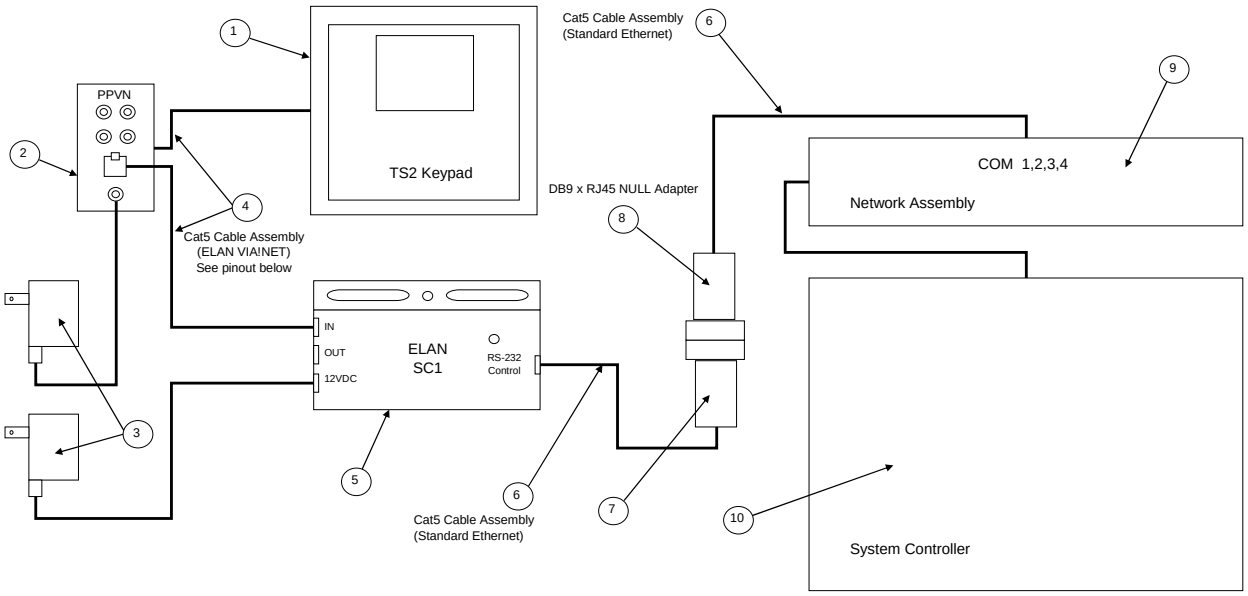
The cat5 jumpers from the SPP to the keypad inputs should follow the ELAN standard color code.

WIRING STANDARD – ELAN CAT5 STANDARD CODE

The color code for the TS2 wiring follows the ELAN standard code as follows.



CONNECTION DIAGRAMS (VIA SC1 & PPVN PRECISION PANEL)



Notes:

1. Standard serial connection method shown above. Alternatively a single Cat5 can be terminated per the optional pin-out diagram below to connect directly between a COM port and the SC1.
2. Up to 4 TS2 keypads can be connected to each PPVN panel for power and VIA!NET communication.
3. Up to 8 PPVN panels can be daisy chained on a single SC1 converter for a total of 32 TS2 keypads maximum on the VIA!NET bus. Each PPVN will require its own power supply, item #3 above.

BILL OF MATERIALS

#	Device	Manufacturer	Part Number	Protocol	Connector Type	Notes
1	TS2 Keypad	ELAN	TS2	VIA!NET	RJ-45F	
2	PPVN Precision Panel	ELAN	PPVN	VIA!NET	RJ-45F x Punch Down	
3	16VDC x 1.5A Power Supply	ELAN	PWR1	N/A	Plug	Use 1 for SC1 & 1 for each PPVN
4	Cat5 Cable Assy. (**ELAN**)	Installer	N/A	VIA!NET	RJ-45 Male X RJ-45 Male	Use ELAN Color Code
5	Serial Controller	ELAN	SC1	VIA!NET x RS-232	RJ-45F x RJ45F	
6	Cat5 Cable Assy. (**Ethernet**)	Installer	N/A	RS-232	RJ-45 Male X RJ-45 Male	Must terminate all 8 conductors
7	DB9M to RJ45 Adapter	ELAN	SC1 Adapter	RS-232	DB-9 Male X RJ-45 Female	Alternatively use HA-CB-307
8	DB9M to RJ45 NULL Adapter	ELAN	HA-CB-328	RS-232	DB-9 Female X RJ-45 Female	
9	Network Assembly	ELAN	HW-NA-18X4	RS-232	RJ-45 Female X DB-9 Female / USB	
10	HomeBrick	ELAN	HW-HB-1080	RS-232	DB9 Male / USB	

CABLE PIN-OUTS

ELAN VIA!NET Cable		
Blue	1	Blue
White/Blue	2	White/Blue
Orange	3	Orange
White/Orange	4	White/Orange
Green	5	Green
White/Green	6	White/Green
Brown	7	Brown
White/Brown	8	White/Brown

Optional Single Cat5 Serial Cable Method COM port to SC1		
RJ45	**Position**	**RJ45**
White/Orange	1	White/Orange
Orange	2	No Connection
White/Green	3	No Connection
Blue	4	Blue
White/Blue	5	Green
Green	6	White/Blue
White/Brown	7	Brown
Brown	8	White/Brown

HOMELOGIC CONFIGURATION DETAILS

The following table provides settings used in the HomeLogic Configurator. Please refer to the Configurator Reference Guide for more details.

- o "<Select>" Select the appropriate item from the list (or drop-down) in the Configurator.
- o "<User Defined>", etc. Type in the desired name for the item.
- o "<Auto>" This field will automatically populate during configuration

Devices	Variable Name	Setting	Comments
Communication Devices	**Name**	<User Defined> (Example: **ELAN SC1**)	
	Type	**Serial Port**	
	Communication Type	**ViaNet SC1**	
	Location	<User Defined> (Not Required)	
	COM Port	<Select>	
Interface Devices<Auto Discover>	**Name**	<User Defined> (Default: **TS2 ViaNet XX**)	See Note#1
	Device Type	**ELAN TS2**	
	COM Device	<Auto> (Default: **ELAN SC**)	See Note #2
	VIA!NET ID	<Auto>	See Note #3
	Enable Weather Page	<Select>	See Note #4
	Enable Forecast Page	<Select>	See Note #4
	Enable Sys Mode Page	<Select>	See Note #4
	Media Zone	<Select>	See Note #5
	Security Partition	<Select>	See Note #5
	Lighting Keypad	<Select>	See Note #5
	Thermostat	<Select>	See Note #5
	Backlight Timeout	<Select>	See Note #5

Notes:

1. The TS2 keypads are automatically discovered, refer to Initial Keypad Configuration Notes above
2. If not already chosen, select the COM device that refers the TS2 to the proper SC1 and COM port.
3. The TS2 keypad IDs will be addressed automatically as they are imported into the system.
4. Select <Yes> to enable the optional page
5. Select the desired zone, partition, or behavior for each keypad

COMMON MISTAKES:

1. Not using a null-modem connection between the controller and the SC1.
2. Not updating the SC1 or OleXL with the ELAN Firmware Updater. The SC1 needs to be running 1.0.2.3 or newer, see update procedure above. OleXL keypads need to be updated to be compatible with the g! software.
3. Not setting the switch on the back side of an OleXL properly. OleXL Keypads have a switch to select the communication type, setting the switch to VIA!Net will allow communication between the keypad and controller.
4. Not waiting for all transfers to the TS2 to complete. Initial transfer to newly installed TS2 keypads can take up to 5 minutes *per TS2,* e.g., eight TS2 keypads ~ 40 minutes (thereafter, most transfers should occur very quickly). TS2 keypads will appear non-functional while VIANet is busy transferring initial data or future firmware updates but can be used normally when transfers are complete.
5. Cross-connecting with a legacy VIANet bus or User Interface. When replacing a legacy ELAN system with VIANet user interfaces with a g! system and TS2 keypads, either the VIANet bus used for SC1 and TS2 **must** be independent of the existing VIANet or **all** existing legacy VIANet user interfaces (VIA! Panels, Ole, OleXL) **must** be removed from the VIANet bus. Otherwise it is very likely that VIANet Unit ID (address) conflicts will prevent the TS2 keypads from working correctly.